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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,193	10/08/2003	Jan-Tian Lian	3313-1043P	5400
2292	7590	07/13/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SEVER, ANDREW T	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/680,193

Applicant(s)

LIAN ET AL.

Examiner

Andrew T Sever

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 1-21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

The specification contains numerous grammatical errors and is made difficult to read.

For example on page 1 the first sentence under Related art reads “In the prior art, a LCOS (Liquid Crystal on Silicon) projector that uses LCOS as reflective polarization valve, is similar to LCD projector in portions of light-guiding, light-splitting and color-combining.” Which is difficult to read and might be better written “The prior art LCOS (Liquid Crystal on Silicon) projectors which use LCOS as a reflective polarization light valve, are similar to LCD projectors in their light-guiding, light-splitting, and color-combining portions.” Numerous other errors were noted through out the specification.

Claim Objections

2. Claims 1-21 are objected to because of the following informalities: grammar.
Appropriate correction is required.

Claims 1-21 contain numerous grammatical errors making them difficult to read and understand. In some cases words have been left out which are needed to clarify what is being claimed. Appropriate correction is required. In the below 35 USC 102 rejection of claim 1 some corrections have been made which can be used as a guide to some of the errors noted.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3-7, 12, 14-18, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Cobb et al. (US 6,758,565.)

Cobb teaches in figure 12 a light projector using a reflective polarization light valve, the light projector comprising:

A light source (20, 22, 80) providing a polarized white beam (Cobb teaches in column 18 lines 14-51 that the light is polarized);

At least a dichroic mirror splitting (27) the white light beam into a plurality of color beams with different colors;

At least a reflective polarization light valve (30b, 30g, and 30r) receiving the polarized color beams and selectively reflecting the color beams;

At least a wire-grid polarizer (24b, 24g, and 24r) located between the dichroic mirror and the reflective polarization valve, the wire-grid polarizer allowing the polarized color beams of one specific polarity to pass through and reflecting the polarized color beams of another specific polarity, the polarized color beams reflected from the reflective polarization valve under light state being reflected via the wire-grid polarizer for color recombining; and

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A color-recombining unit (26) combining the color beams reflected from the wire-grid polarizer.

With regards to applicant's claim 3:

As can be clearly seen the light beam is S polarized after the dichroic beam splitter (Cobb shows the green light having its orientation rotated to S polarization after the dichroic beam splitter but before it enters any polarization sensitive components, this is due to a feature of Cobb's dichroic beam splitters.)

With regards to applicant's claim 4:

Before each light beam enters the color-recombining unit they pass through polarizers of one sort: 60b, 60r, and analyzers 72.

With regards to applicant's claim 5:

Further they are all re-reflected by their wire-grid polarizers.

With regards to applicant's claim 6:

Cobb teaches focusing lens/relay lenses before the light valves to focus the light onto the light valves (82b, 82r, and a similar set of lenses which is unlabeled before the green light valve.)

With regards to applicant's claim 7:

Cobb teaches in column 11 lines 30-40 that the lens/relay system is double telecentric, thus making the light source a telecentric optical system.

With regards to applicant's claims 12, 14, 15, 16, 17, and 18:

See above with respect to claims 1, 3, 4, 5, 6, and 7 respectively.

With regards to applicant's claim 20:

Polarizers 60b and 60r are provided to rotate the red and blue lights to a S-polarized state while green remains in a P-polarized state.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cobb as applied to claims 1, 3-7, 12, 14-18, and 20 above, and further in view of Rosenbluth (US 6,636,276.)

As described in more detail above, Cobb teaches a light projector and a projection display using a reflective polarization light valve as well as a wire grid polarizer among

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other things. Cobb, however, does not teach that the polarization light valve is specifically a LCOS (liquid crystal on silicon.)

Rosenbluth teaches in column 1 lines 18-27 that LCOS imagers have several advantages over the competing technologies of LCD and DMD's, namely they are cheaper and capable of high definition, accordingly given that LCOS imagers have important advantageous over the prior art reflective imagers it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a LCOS imager in the projection and display devices taught by Cobb.

7. Claims 8-11, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cobb as applied to claims 1, 3-7, 12, 14-18, and 20 above, and further in view of Takezawa (US 6,722,768.)

As described in more detail above, Cobb teaches a light projector and a projection display using a reflective polarization light valve as well as a wire grid polarizer among other things. Cobb does not specifically each light conditioning components which comprise of a divergent lens, a lens array, and a P/S Converter among other things.

Such components however are well known, for example Takezawa teaches them in figure 2 in the order of light source (122), divergent lens (126), lens array (140, and 150), P/S converter (160), and condensing lens (170) as claimed by applicant's claim 9. Takezawa like Cobb further teaches in column 5 lines 30-40 that the reflector for the light source is elliptical as is claimed by applicant's claims 11 and 21. Takezawa teaches in column 3 lines 47-65 that such a illumination system improves contrast. Since it is

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desirous to have good contrast in projection systems it would have been obvious to one of ordinary skill in the art at the time the invention was made to include all the components taught by Takezawa in the illumination subsystem of Cobb.

With regards to applicant's claim 10:

See above with regards to applicant's claim 20.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,661,475 to Stahl teaches both a Wire grid polarizer (40) and LCOS modulators in figure 1.

US 2003/0123031 to Nelson et al. teaches in figure 3 a projection system utilizing reflective light valves.

US 6,183,090 to Nakanishi et al. teaches in figure 4B a projection system using reflective light valves with polarization beam splitters.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 271-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS

A handwritten signature in black ink, appearing to read 'David Gray', with a large, stylized flourish extending from the end of the signature.

David Gray
Primary Examiner